

## REMARKS

### Request for Reconsideration

Applicant has carefully considered the matters raised by the Examiner in the outstanding Office Action but remains of the opinion that patentable subject matter is present. Applicant respectfully requests reconsideration of the Examiner's position based on the above amendments to the claims and the following remarks.

### Claims Status

Claims 14, 16-22, and 25 are pending.

Claim 14 has been amended herein to recite that the first light source faces the one side and the first sensor faces the other side. Probably the best support for these amendments is in Figs. 2 and 3.

Claims 15, 23, and 24 have been canceled.

### Claim Rejections under 35 USC § 102(b)

Claims 14, 15, and 21-24 had been objected to as being anticipated by Chin (U.S. Patent 5,389,777).

Claim 14 has been amended herein to distinguish Applicant's design from Chin ('777). Claim 15 has been canceled. Chin's configuration uses a system involving "light pipes." Chin does not disclose a first light source facing one side of the component and a first sensor facing the other side of the component. Chin's light source faces in the direction of the chamber of the first sensor and is deflected out of the chamber when it reaches the end of the longitudinal pipe and is directed through the horizontal region. Applicant's light source does not have to pass through an angled tunnel. Additionally, the sensor in Chin does not face the horizontal portion of the receiving chamber, it faces the longitudinal portion of the receiving chamber which only picks up light after it is forced beyond the horizontal portion and into the longitudinal portion. The sensor used

in Applicant's design always faces in the same direction as the other side of the component, it does not have to travel in various angles or through a tunnel to reach the other side. Thus, Applicant's design utilizes a configuration where the light source and sensor face each other. There is no need to use an angled piping system.

Claims 21 and 22 have been amended herein to further distinguish Applicants design from Chin ('777). It is Examiner's position that Chin ('777) (col. 3, lines 43-51) state the light guiding medium used is a fiber optic cable. However, Applicant respectfully disagrees. Chin does not use a fiber optic cable to emit and receive light. Chin merely states the first light pipe receives light from a light emitting source located in the chamber. Chin only discloses the shape of the chamber and material potentially used to manufacture the apparatus, Chin never states specifically a fiber optic cable is or should be used in the design. Chin does mention the use of an optical transducer. However, a transducer simply converts energy from one form to another and, thus, the phraseology pointed out by Examiner does not show Chin uses a fiber optic cable.

#### Claim Rejections under 35 USC § 103

Claims 16-20 and 25 were rejected as being unpatentable over Chin (U.S. Patent 5,389,777) in light of Chin (U.S. Patent 5,532,473).

As noted above, Applicant respectfully disagrees with Examiner that Chin ('777) discloses all of the limitations as applied to claim 14. Moreover, as pointed out by Examiner, Chin does not disclose the use of a reflector to reflect light back through the slot or the use of a sensor on the same side as the light source to receive the reflected light. Examiner states it would have been obvious to one skilled in the art to use a reflector on the opposite side of the measuring edge since the use of reflectors to control geometry are well known in the art and the substitution between reflectance and transmittance measurements is well known as evidenced by Chin ('473). However, the configuration of the light source, reflector and sensor is a unique alternate embodiment of the present invention. The present invention allows light to pass through an opening in the measuring device and be reflected back through the opening to a measuring device

(sensor) located on the same side as the light source. Although in combination Chin ('777) and Chin ('473) would disclose an apparatus containing a light source, reflector and measuring device, independently or in combination, the prior art referenced does not also utilize a measuring device. Chin ('473) merely discloses the use of a reflector in combination with a light source and sensor. However, Chin ('473) does not disclose a similar configuration to the present invention. First Chin ('473) uses the same tunnel configuration used by Chin ('777) to emit and receive light. Unlike the present invention, this tunnel system does not allow the light source or sensor to face perpendicular to the reflector. Moreover, light emitted in Chin ('473) does not pass through a measuring device to reach the reflector. Light emitted is directed toward the reflector, but some light passes beyond the reflector and does not "bounce back" to the sensor. The present invention is configured to ensure light emitted which passes through the measuring source does not pass beyond the reflector.

In response to claim 18, Applicant respectfully disagrees with Examiner. It would not have been obvious to one of ordinary skill in the art to have a control device connected to a light source and second sensor to measure light prior to the change in the measuring edge. Examiner references Nakaho (U.S. Patent 5,272,335), stating in combination with Chin ('777), the present embodiment would have been obvious. However, after careful review of Nakaho, it is unclear how Examiner reached this conclusion as Nakaho does not show a configuration described by applicant. Nakaho does disclose the use of multiple sensors. However, each sensor is associated with an independent light source. Nakaho does not disclose a configuration similar to Applicant's.

In response to claim 25, as noted above, Applicant respectfully disagrees with Examiner that Chin ('777) discloses all of the limitations as applied to claim 14. Moreover, it would not have been obvious to one skilled in the art to apply the positional measurement technique outlined by Applicant to rotary or linear bearing. Nakaho ('335) does not disclose the use of rotary or linear bearings. Nakaho discloses a rotary shaft that is supported by a casing. Although, the drawings of Nakaho may resemble a

configuration using a bearing, the drawings do not clearly show a bearing and the description of Nakaho does not disclose the use of a bearing.

Conclusion

In view of the foregoing, it is respectfully submitted that the Application is in condition for allowance and such action is respectfully requested.

Should any fees or extensions of time be necessary in order to maintain this Application in pending condition, appropriate requests are hereby made and authorization is given to debit account #02-2275.

Respectfully submitted,

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